



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/986,911 | 11/13/2001 | Toshihide Ibaraki | 107292-00030 | 6650 |

32294 7590 02/23/2006

SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER

JARRETT, RYAN A

ART UNIT PAPER NUMBER

2125

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,911

Applicant(s)

IBARAKI ET AL.

Examiner

Ryan A. Jarrett

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-69 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1, 2, 45-48, and 61-69, drawn to a method of working planning in determining order of working at a plurality of working areas scattered on workpiece, the plurality of working areas to be simultaneously worked, classified in class 700, subclass 173.
 - II. Claims 3, 4, 21, 49, 50, and 57 drawn to a working planning method in determining order of working by a applying a traveling salesman problem to a plurality of working positions scattered on a workpiece or working areas set in a workpiece, classified in class 700, subclass 173.
 - III. Claims 5-7 and 51, drawn to a work planning method in determining placement of working areas, classified in class 700, subclass 173.
 - IV. Claims 8 and 52, drawn to a work planning method in determining placement of working areas, classified in class 700, subclass 173.
 - V. Claims 9 and 53, drawn to a work planning method in determining placement of working areas, classified in class 700, subclass 173.
 - VI. Claims 10-15 and 54, drawn to a work planning method in determining placement of working areas, classified in class 700, subclass 173.
 - VII. Claims 16, 17, and 55, drawn to a work planning method in determining placement of working areas to be worked by working means based on

working positions scattered on a workpiece, said method comprising, when the same working position belongs to a plurality of areas, determining said areas to be worked so that number of working positions belonging to each of a plurality of simultaneous working areas is equal, classified in class 700, subclass 173.

VIII. Claims 18-20 and 56, drawn to a work planning method in determining placement of working areas to be worked by working means based on working positions scattered on a workpiece, said method comprising the step of adjusting an area position so that working positions are gathered to center of each working area, classified in class 700, subclass 173.

IX. Claims 22-25, 58, and 59, drawn to a working planning method in simultaneously working a workpiece placed on a movable stage by a plurality of working units capable of scanning or moving working means within a working area comprising determining an interval between the working units so that number of scanning or moving the working means or number of moving the stage is minimized, classified in class 700, subclass 173.

X. Claims 26-40, 43, 44, and 60, drawn to a working planning method in working a workpiece using working means of scanning or moving in a plurality of directions, wherein point position data representing working positions or working areas scattered on the workpiece is expressed in a tree type data structure, classified in class 700, subclass 173.

- XI. Claims 41 and 42, drawn to a working planning method wherein an unnecessary, high load operation is removed by finding a set of areas in which placement of point data in one of the working areas and placement of point data in another working area are relatively matched, classified in class 700, subclass 173.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (Invention I) as claimed does not require the particulars of the subcombination (Invention II) as claimed because Invention I does not require the determining the order of working to be implemented by applying a traveling salesman problem. The subcombination has separate utility such as in a method that does not require a plurality of working areas to be simultaneously worked in an equal amount of time.

Inventions III and VI are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (Invention VI, claim 10) as claimed

Art Unit: 2125

does not require the particulars of the subcombination (Invention III, claim 5), as evidenced by claims 10 and 11. The subcombination has separate utility such as in a method that does not require subsequently shifting a working area to a neighborhood and removing an unnecessary working area, as evidenced by claim 5.

Inventions IV and VI are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (Invention VI, claim 10) as claimed does not require the particulars of the subcombination (Invention IV, claim 8), as evidenced by claims 10 and 12. The subcombination has separate utility such as in a method that does not require subsequently shifting a working area to a neighborhood and removing an unnecessary working area, as evidenced by claim 8.

Inventions V and VI are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (Invention VI, claim 10) as claimed does not require the particulars of the subcombination (Invention V, claim 9), as evidenced by claims 10 and 13. The subcombination has separate utility such as in a method that does not require subsequently shifting a working area to a neighborhood and removing an unnecessary working area, as evidenced by claim 9.

The remaining inventions are all related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, each subcombination has separate utility as generally described above with respect to the claim groupings. For example, Inventions I and III-XI are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, Invention I has separate utility such as in a method that shifts a start point of a working path in each of a plurality of simultaneous working areas so that time for scanning or moving simultaneously performed can be equal, thereby shortening a total working time. See MPEP § 806.05(d).

3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper. And because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Art Unit: 2125

4. This application contains claims directed to the following patentably distinct species:

Invention III:

Claim 6

Claim 7

Invention VI:

Claim 11

Claim 12

Claim 13

Claim 14

Claim 15

Invention IX:

Claim 23

Claim 24

Claims 25, 59

Invention X:

Claim 27

Claim 28

Claim 29

Claims 30-33

Claims 30, 34, 35

Claims 30, 36, 38, 39

Claims 30, 37, 40

5. The species are independent or distinct because they are directed to related processes. The related inventions are distinct if the inventions as claimed do not overlap in scope, i.e., are mutually exclusive; the inventions as claimed are not obvious variants; and the inventions as claimed are either not capable of use together or can have a materially different design, mode of operation, function, or effect. See MPEP § 806.05(j).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 5, 10, 22, 26, 51, 54, 58, and 60 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

6. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Conclusion

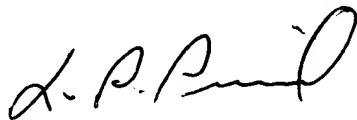
7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Art Unit: 2125

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan A. Jarrett whose telephone number is (571) 272-3742. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ryan A. Jarrett
Examiner
Art Unit 2125

2/14/06
RAJ

LEO PICARD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100